

AMENDMENTS TO THE CLAIMS

Please cancel claims 3 and 10, amend claims 1, 4-6, 8, 9, 11-14 and 16 and add new claims 35 and 36 as follows:

Claim 1. (Currently amended) A semiconductor film, comprising:

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a silicon substrate; and

a graded gallium nitride layer deposited on the silicon substrate having a varying composition of a substantially continuous grade from an initial composition to a final composition formed from a supply of at least one precursor in a growth chamber without any interruption in the supply;

wherein the graded gallium nitride layer has a net compressive stress.

Claim 2. (Original) The semiconductor film of claim 1, wherein the graded gallium nitride layer is deposited using metalorganic chemical vapor deposition (MOCVD).

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[Claim 3. (Cancelled)]

Claim 4. (Currently amended) The semiconductor film of claim 354, wherein the graded gallium nitride layer is deposited by changing a vapor pressure of the supply of at least one precursor in a growth chamber for the graded gallium nitride layer.

Claim 5. (Currently amended) The semiconductor film of claim 354, wherein the precursor is gallium, aluminum or nitrogen.

Claim 6. (Currently amended) The semiconductor film of claim 351, wherein the graded gallium nitride layer is deposited by changing a parameter of the growth chamber for the graded gallium nitride layer.

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Amended
Claim 7. (Original) The semiconductor film of claim 6, wherein the parameter of the growth chamber is a total pressure, a temperature of the substrate, a total flow, a rate of substrate rotation or a reactor wall temperature.

Claim 8. (Currently amended) The semiconductor film of claim 351, wherein the graded gallium nitride layer is deposited by changing the geometry of the growth chamber for the graded gallium nitride layer.

Claim 9. (Currently amended) The semiconductor film of claim 8, wherein changing the geometry of the growth chamber comprises moving the silicon substrate relative to injectors of the growth chamber.

Claim 10. (Cancelled)

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Claim 11. (Currently amended) The semiconductor film of claim 1, wherein the initial composition comprises at least a substantially 20% is a high aluminum composition.

Claim 12. (Currently amended) The semiconductor film of claim 1, wherein the initial composition is aluminum nitride or an high aluminum content aluminum gallium nitride where the aluminum content comprises at least substantially 20%.

Claim 13. (Currently amended) The semiconductor film of claim 1, wherein the final composition comprises less than a substantially 20% is a low aluminum composition.

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Claim 14. (Currently amended) The semiconductor film of claim 1, wherein the final composition is gallium nitride or an low aluminum content aluminum gallium nitride where the aluminum content comprises less than substantially 20%.

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Claim 15. (Original) The semiconductor film of claim 1, further comprising at least one additional layer disposed on the graded gallium nitride layer.

Claim 16. (Currently amended) The semiconductor film of claim 35, wherein at least one other element is introduced into the growth chamber for the graded gallium nitride layer causing no abrupt variations in the varying composition of the graded gallium nitride layer.

Claim 17. (Original) The semiconductor film of claim 16, wherein the other element is silicon, indium or arsenic.

Claims 18-34 (Withdrawn)

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Claim 35. (New) The semiconductor film of claim 1, wherein the graded gallium nitride layer is formed from a supply of at least one precursor in a growth chamber without any interruption in the supply.

Amend Sub B1
Claim 36.

(New) The semiconductor film of claim 1, wherein the graded gallium nitride layer is at least approximately 0.55 μm thick.